

Remarks/Arguments

Reconsideration and allowance are respectfully requested in light of the following remarks.

Claims 1, 3, 5-12 and 20-29 and 32-35 remain pending. Claims 2, 4, 13-19 and 30-31 have been cancelled.

Claims 27-29 and 32-35 are directed to an aqueous binder composition for making glass fiber products. Claim 27 is independent and the remaining claims are dependent.

Claim 27 has been amended to introduce the recitation of the carboxyl:hydroxyl (COOH:OH) ratio from claim 31. Accordingly, claims 30 and 31 have been canceled and the dependency of claim 35 corrected appropriately. As noted in paragraph [40], the mole ratio of carboxyls to hydroxyls is preferably in the range of 1.5:1 to 0.7:1 as now recited in claim 27.

Claims 17-35 stand rejected as being unpatentable within the meaning of 35 U.S.C. 103(a) over Reck et al., U.S. Patent 6,114,464. This rejection is respectfully traversed.

Renk '464 describes a thermally curable mixture of hydroxyalkylated polyamines and polycarboxylic acids useful as binders for shaped articles, such as chipboard. Renk's binder composition requires two distinct components (1) a water-soluble, linear or branched aliphatic compound containing at least two functional amino groups and having at least one hydroxyalkyl moiety (*i.e.*, a complex alkanolamine) and (2) an addition polymer containing from 5 to 100% by weight of units derived from at least one ethylenically unsaturated mono- or dicarboxylic acid and obtainable by free-radical polymerization. The addition polymer, **component (2)** contains from 5 to 100% by weight, of units derived from at least one ethylenically unsaturated mono- or dicarboxylic acid. Other vinyl compounds that can be polymerized with the unsaturated mono- or dicarboxylic acid(s) are described in columns 15-16 of the Renk '464 patent.

As the Office Action notes some of the unsaturated monomers suggested by Renk for co-reaction with the at least one ethylenically unsaturated mono- or dicarboxylic acid in preparing **component (2)** are compounds having a hydroxyl moiety, such as hydroxyethyl (meth)acrylate. Renk, however, does specifically describe using such monomers to make **component (2)** and does not indicate at what level such compounds should be used. Indeed, we submit that based on the entirety of Renk's teachings a skilled worker would not have found it obvious to use such monomers in the amount required by the pending claims for preparing the "water soluble adduct resulting from free radical solution polymerization of an unsaturated carboxylic acid monomer

having a molecular weight of less than 750 and an unsaturated hydroxyl monomer having a molecular weight of less than 750.”

As presently defined, the pending claims require that a sufficient amount of the unsaturated hydroxyl monomer be supplied so that the COOH:OH ratio of the resulting adduct be in the range of 1.5:1 to 0.7:1. We submit that nothing in Renk would have led a skilled worker to this particular result.

Indeed, we submit that when a skilled worker considers the actual examples presented by Renk for illustrating the invention and also considers other specific teachings in the application, the skilled worker would conclude that Renk ‘464 favors the use of **component (1)**, *i.e.*, the linear or branched aliphatic compound containing at least two functional amino groups (*i.e.*, the complex alkanolamine), generally as the sole source and clearly as the primary source of hydroxyl groups for reacting with the addition polymer, **component (2)**.

Renk teaches (in the paragraph bridging columns 18 and 19) that the complex alkanolamine (**component (1)**) and the addition polymer (**component (2)**) are preferably used

in such a relative ratio that the molar ratio of carboxyl groups of component (2) to hydroxyl groups of component (1) is within the range from 20:1 to 1:5, preferably within the range from 8:1 to 1:2, particular preferably within the range from 4:1 to 1:1.

Including a substantial amount of hydroxyl groups as part of the molecular make-up of **component (2)** would significantly alter the COOH to OH ratio in a way Renk does not consider or discuss. Indeed, it is apparent in the progression of Renk’s preferred, to more preferred, to most preferred COOH:OH ratio ranges that Renk favors the presence of excess carboxyl (COOH) groups, a preference that would be upset by the presence of a significant fraction of hydroxyl (OH) groups as part of the addition polymer itself.

Thus, when one considers that all of the Examples in the Renk ‘464 patent appear to use solely unsaturated carboxyl monomers for making the addition polymer, **component (2)**, and that the use of an unsaturated hydroxyl monomer for making the addition polymer is not remotely mentioned in the examples, a skilled worker would not have found it obvious to

produce a binder composition containing the a water soluble adduct required by the pending claims.

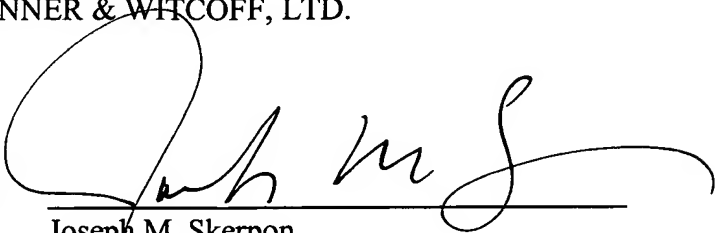
Applicants request reconsideration of the pending claims in view of the foregoing amendments and arguments.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Date: June 14, 2006

By:



Joseph M. Skerpon
Registration No. 29,864

Banner & Witcoff, Ltd.
1001 G Street, N.W.
Washington, D.C. 20001-4597
(202) 824-3000

JMS/